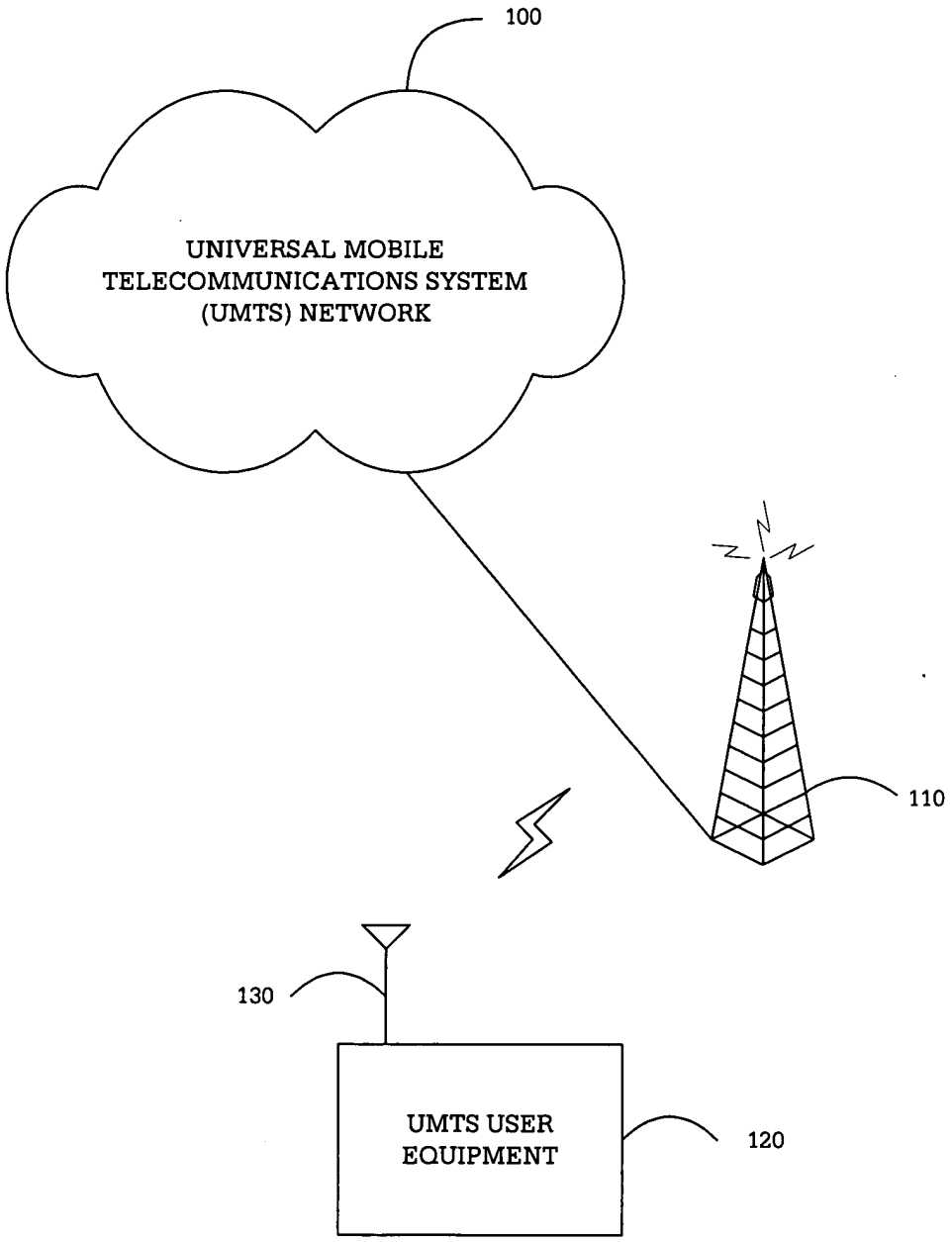
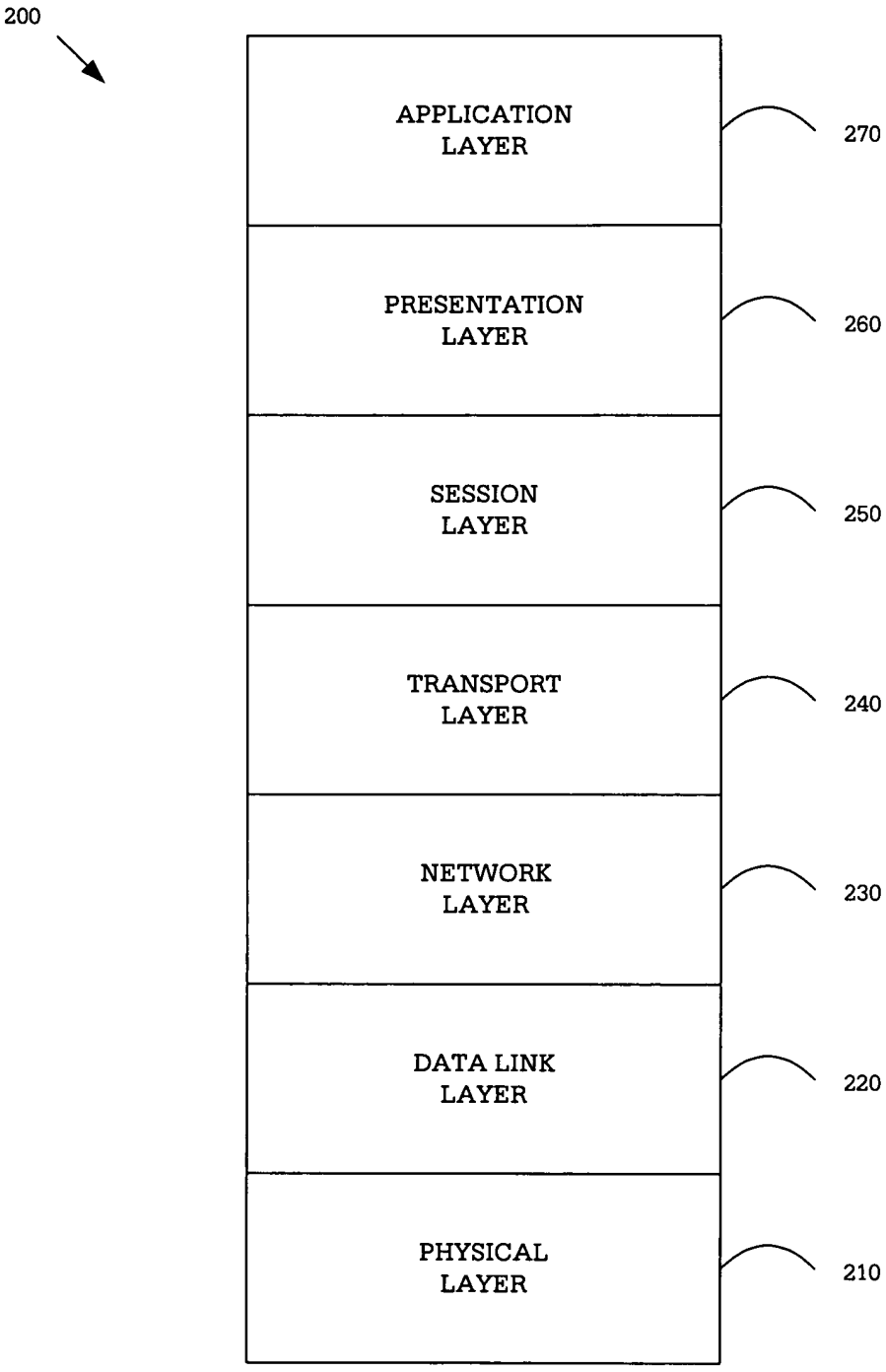

100
UNIVERSAL MOBILE
TELECOMMUNICATIONS SYSTEM
(UMTS) NETWORK
110
130
UMTS USER
EQUIPMENT
120

FIGURE 1




OPEN SYSTEMS INTERCONNECTION (OSI) LAYERS

FIGURE 2
PRIOR ART

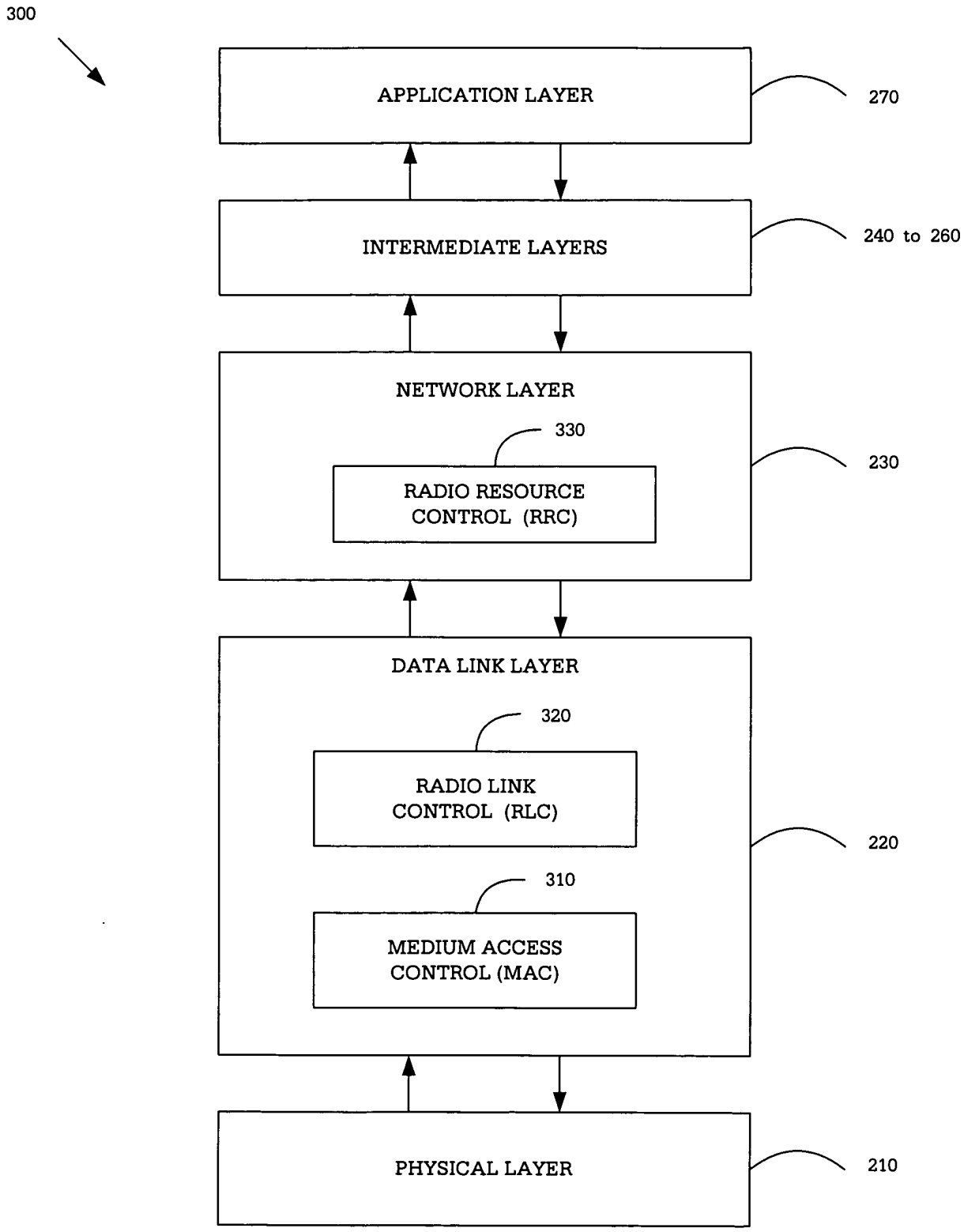



FIGURE 3
PRIOR ART

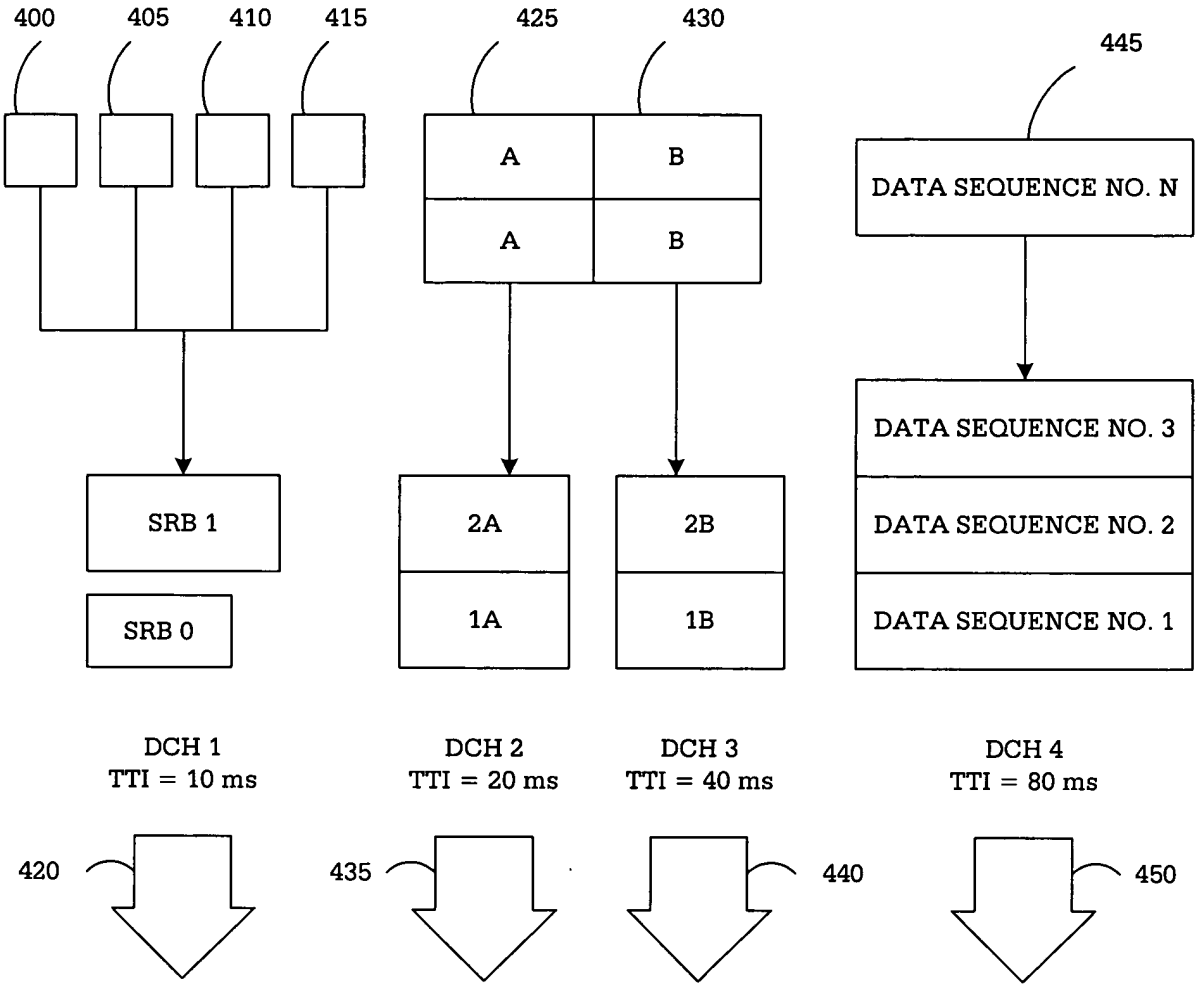



FIGURE 4
PRIOR ART

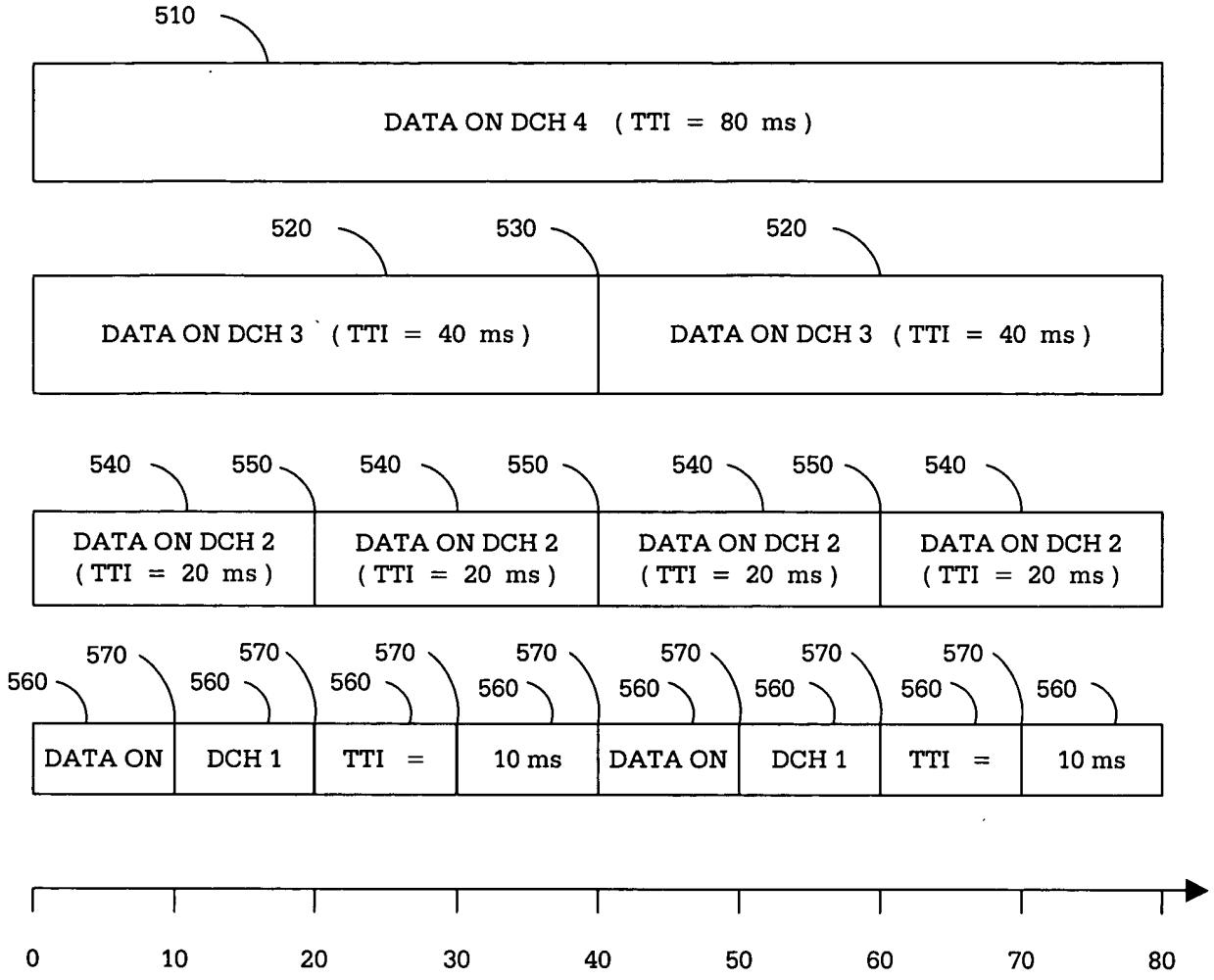



FIGURE 5
PRIOR ART

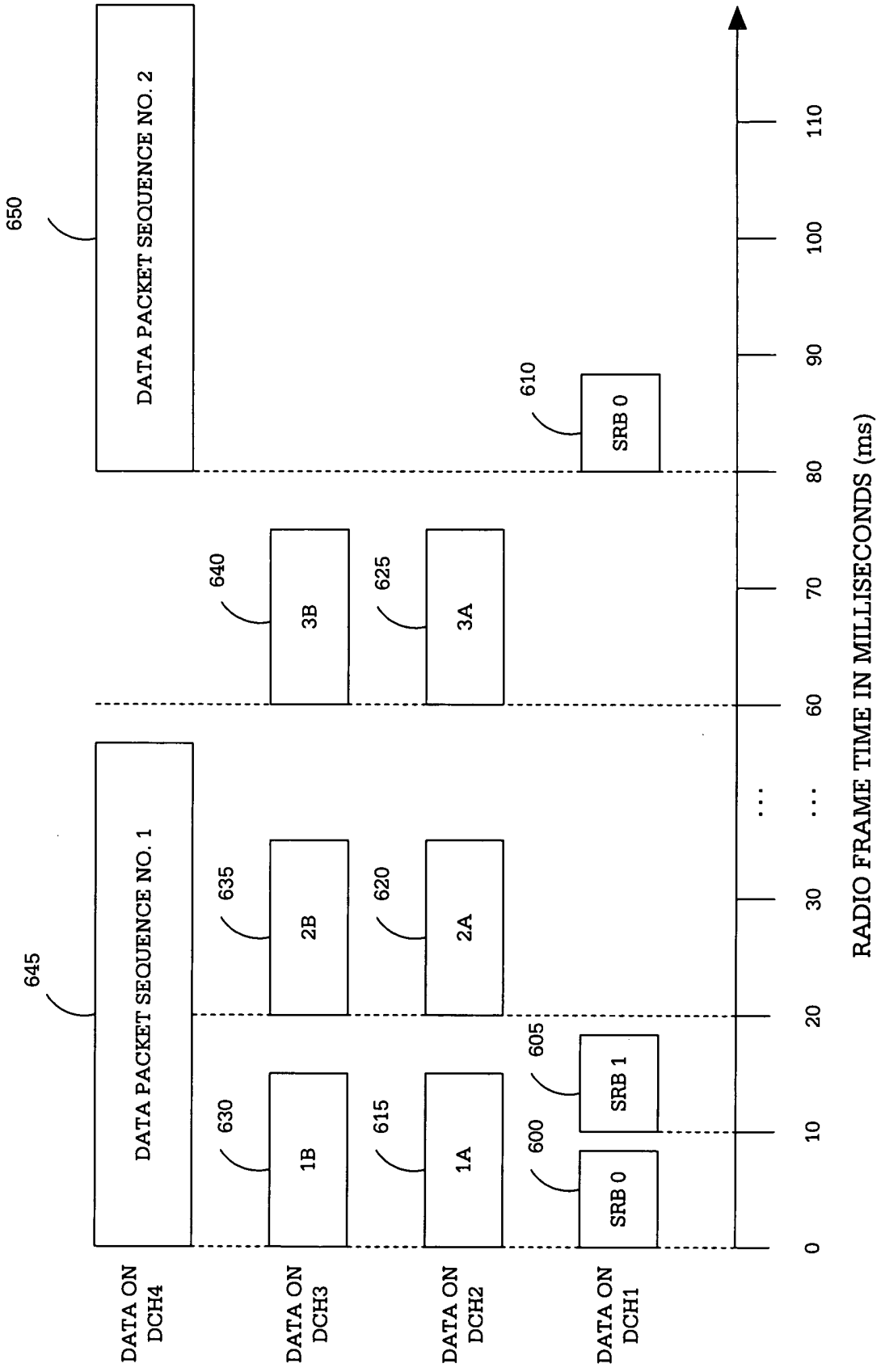



FIGURE 6
PRIOR ART

700

| TFCI | $TFI_1$ | $TFI_2$ | $TFI_3$ | $TFI_4$ |
|---|---|---|---|---|
| 0 | 0 | 0 | 0 | 0 |
| 1 | 1 | 0 | 0 | 0 |
| 2 | 0 | 1 | 0 | 0 |
| 3 | 1 | 1 | 0 | 0 |
| 4 | 0 | 0 | 1 | 0 |
| 5 | 1 | 0 | 1 | 0 |
| 6 | 0 | 0 | 0 | 1 |
| 7 | 0 | 1 | 1 | 0 |
| 8 | 0 | 1 | 1 | 1 |

FIGURE 7
PRIOR ART

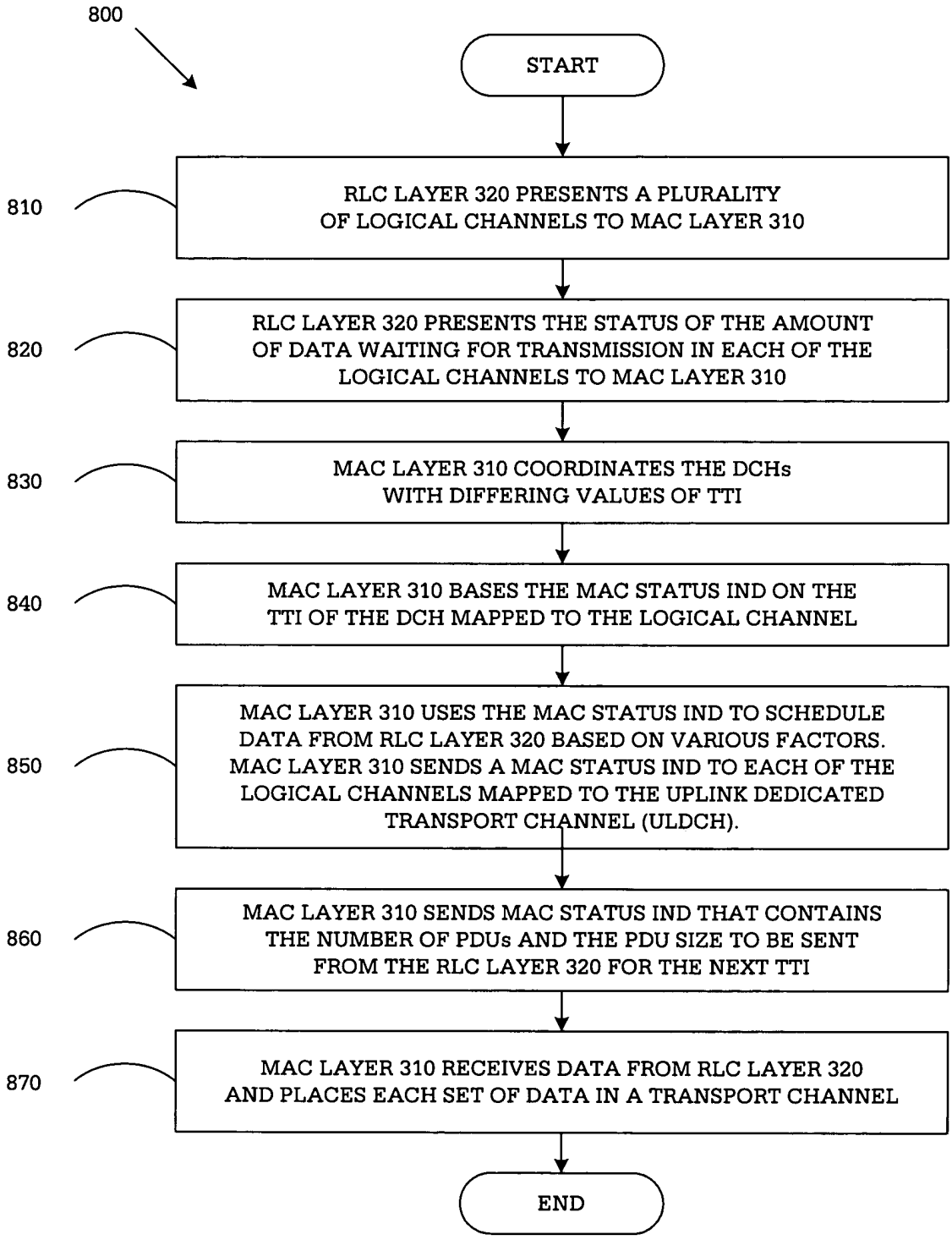



FIGURE 8
PRIOR ART

900

| | DCH1 | DCH2 | DCH3 | DCH4 |
|---|---|---|---|---|
| TFCI | TFI LIST (TFC SET) | | | |
| 0 | 1 | 0 | 0 | 0 |
| 1 | 0 | 1 | 0 | 0 |
| 2 | 1 | 1 | 0 | 0 |
| 3 | 0 | 1 | 1 | 0 |
| 4 | 1 | 1 | 1 | 0 |
| 5 | 0 | 2 | 0 | 0 |
| 6 | 1 | 2 | 0 | 0 |
| 7 | 0 | 2 | 1 | 0 |
| 8 | 1 | 2 | 1 | 0 |
| 9 | 0 | 2 | 1 | 1 |
| 10 | 1 | 2 | 1 | 1 |

FIGURE 9

1000

| | DCH1 | DCH2 | DCH3 | DCH4 |
|---|---|---|---|---|
| TFCI | TFI LIST (TFC SET) | | | |
| 0 | 1 | 0 | 0 | 0 |
| 2 | 1 | 1 | 0 | 0 |
| 4 | 1 | 1 | 1 | 0 |
| 6 | 1 | 2 | 0 | 0 |
| 8 | 1 | 2 | 1 | 0 |
| 10 | 1 | 2 | 1 | 1 |

FIGURE 10

1100

| | DCH1 | DCH2 | DCH3 | DCH4 |
|---|---|---|---|---|
| TFCI | TFI LIST (TFC SET) | | | |
| 6 | 1 | 2 | 0 | 0 |
| 8 | 1 | 2 | 1 | 0 |
| 10 | 1 | 2 | 1 | 1 |

FIGURE 11

1200

| | DCH1 | DCH2 | DCH3 | DCH4 |
|---|---|---|---|---|
| TFCI | TFI LIST (TFC SET) | | | |
| 8 | 1 | 2 | 1 | 0 |
| 10 | 1 | 2 | 1 | 1 |

FIGURE 12

1300

| | DCH1 | DCH2 | DCH3 | DCH4 |
|---|---|---|---|---|
| TFCI | TFI LIST (TFC SET) | | | |
| 8 | 1 | 2 | 1 | 0 |

FIGURE 13

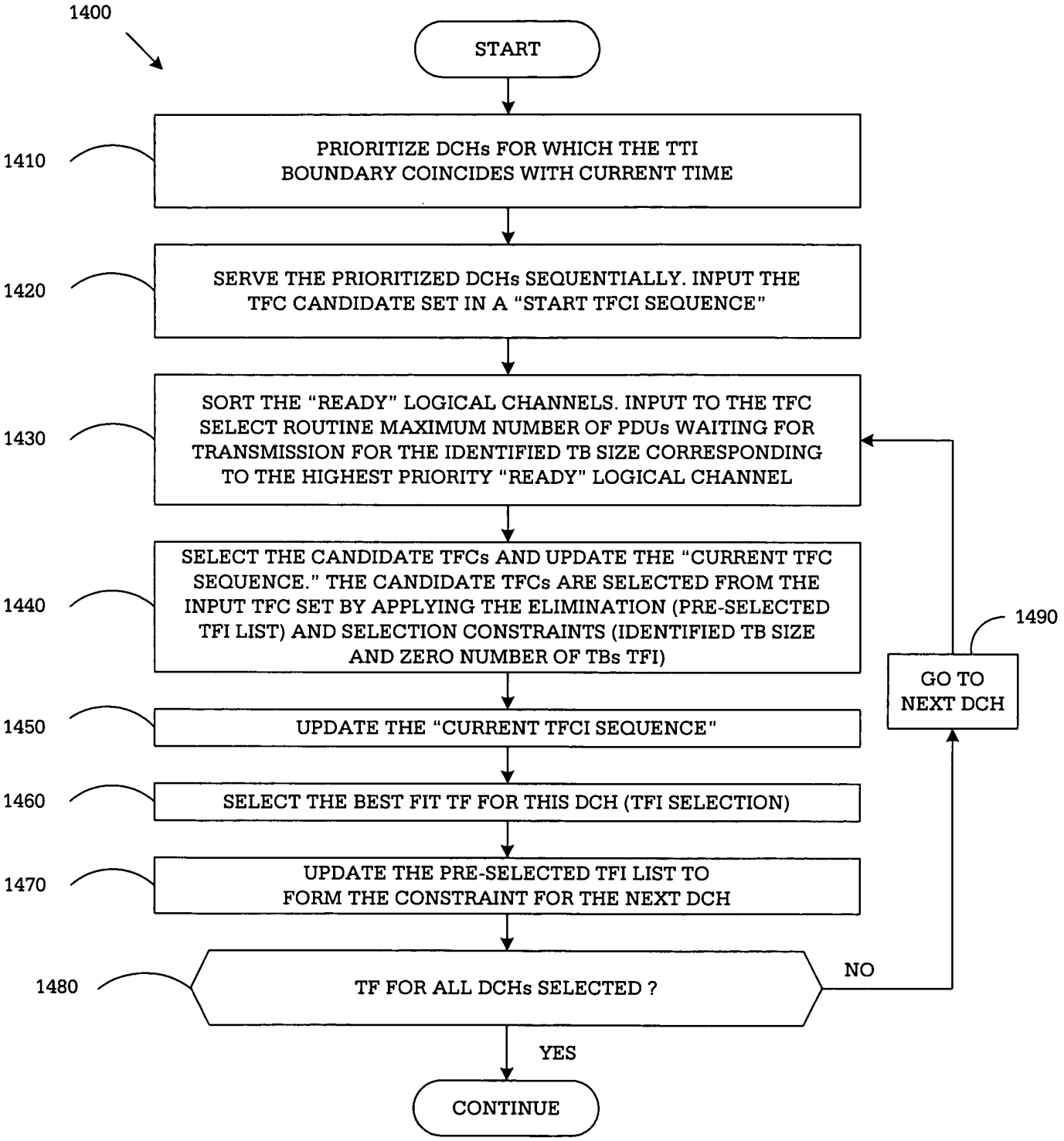

1400
START
1410
PRIORITIZE DCHs FOR WHICH THE TTI BOUNDARY COINCIDES WITH CURRENT TIME
1420
SERVE THE PRIORITIZED DCHs SEQUENTIALLY. INPUT THE TFC CANDIDATE SET IN A "START TFCI SEQUENCE"
1430
SORT THE "READY" LOGICAL CHANNELS. INPUT TO THE TFC SELECT ROUTINE MAXIMUM NUMBER OF PDUs WAITING FOR TRANSMISSION FOR THE IDENTIFIED TB SIZE CORRESPONDING TO THE HIGHEST PRIORITY "READY" LOGICAL CHANNEL
1440
SELECT THE CANDIDATE TFCs AND UPDATE THE "CURRENT TFC SEQUENCE." THE CANDIDATE TFCs ARE SELECTED FROM THE INPUT TFC SET BY APPLYING THE ELIMINATION (PRE-SELECTED TFI LIST) AND SELECTION CONSTRAINTS (IDENTIFIED TB SIZE AND ZERO NUMBER OF TBs TFI)
1450
UPDATE THE "CURRENT TFCI SEQUENCE"
1460
SELECT THE BEST FIT TF FOR THIS DCH (TFI SELECTION)
1470
UPDATE THE PRE-SELECTED TFI LIST TO FORM THE CONSTRAINT FOR THE NEXT DCH
1480
TF FOR ALL DCHs SELECTED ?
NO
1490
GO TO NEXT DCH
YES
CONTINUE

FIGURE 14

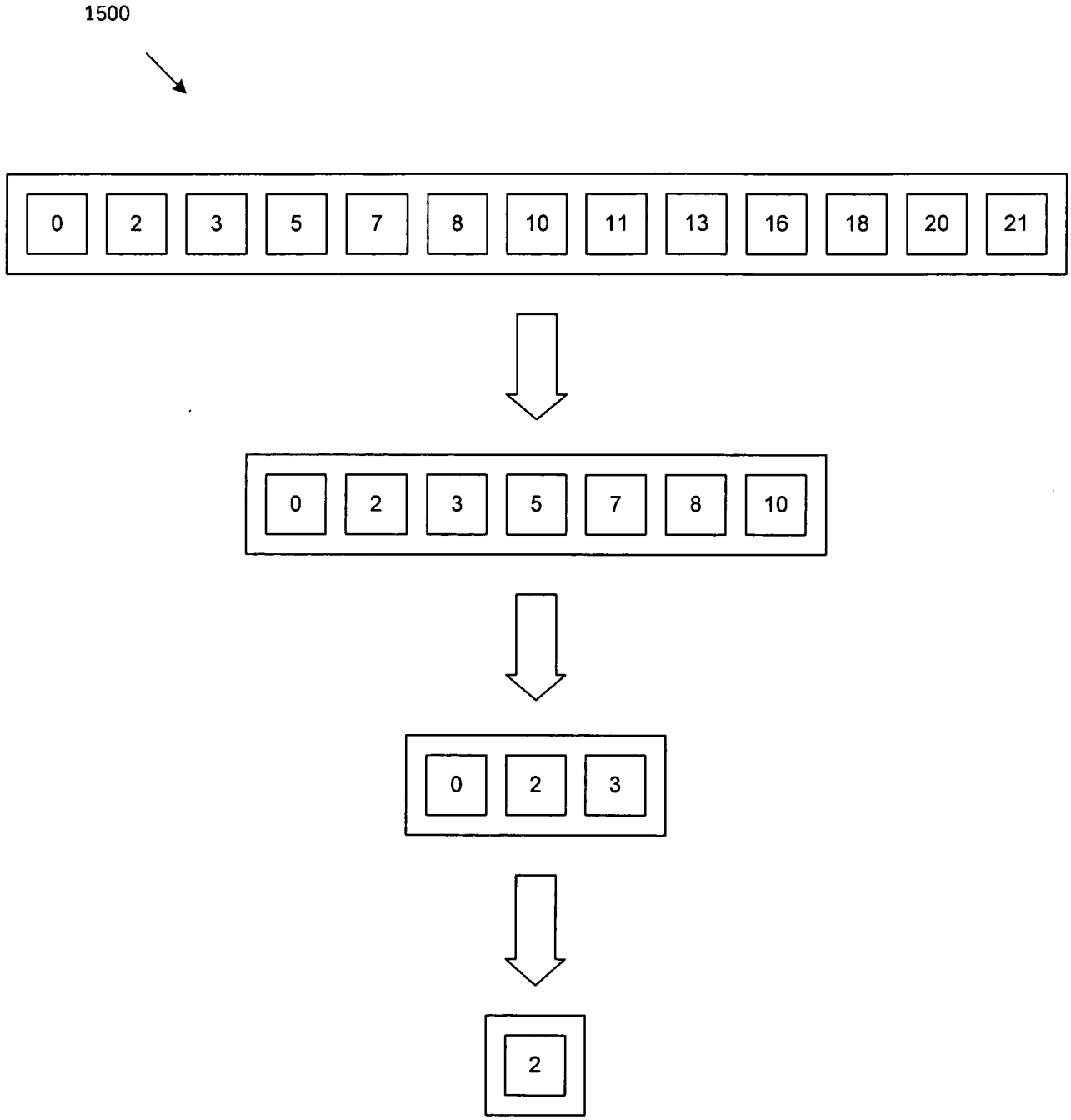



FIGURE 15